

MISCELLANEOUS.

On the Development of the Purkinjean Corpuscle in Bone.

Schwann, in his 'Mikroskopische Untersuchungen,' considers that the Purkinjean corpuscle of bone is derived from the pre-existing cartilage-cell, and that the canaliculi are prolongations, or protrusions of the cell-wall. Many later authors, among whom are Gerber, and Todd and Bowman, express the opinion that it originates in the nucleus of the temporary cartilage-cell, and Tomes entertains the idea, that after the formation of the osseous tubes, in the process of ossification, the latter are filled up by a deposit of osseous granules, and while this deposit is going on, small cells are left, which are the rudimentary Purkinjean corpuscles. Henle thinks them to be the cavities of cells, the thickened walls of which are pierced by the canaliculi. Hassall confirms the view of Schwann, by stating, "the bone-cells (Purkinjean corpuscles) are to be regarded as complete corpuscles, the canaliculi of which are formed by the extension of the cell-wall, which is proved by watching the formation and development of bone."

The opinion of Schwann and Hassall I can fully corroborate from my own observations upon an ossifying frontal bone, from a human embryo measuring 2 inches from heel to vertex. Each lateral half of the bone is about $3\frac{1}{2}$ lines in diameter, and presents to the naked eye the appearance of a delicate and close network, arising from the numerous areolæ occupied by temporary cartilage. The frontal and orbital plates, it is worthy of incidental remark, at this period are nearly on a plane with each other, or are connected together at a very obtuse angle along a central, transverse, crescentic, raised line, the rudimentary supra-orbital ridge.

The mode of development of the Purkinjean corpuscle, as noticed upon the upper or posterior border of the os frontis, is briefly as follows:—After the primitive ossific rete has been formed from the deposit of the osseous salts, enclosing groups of cartilage-cells in the areolæ, the further deposit takes place in a fibrous or line-like course from the parietes of the areolæ of the primitive osseous rete, in the interspaces of the cartilage-cells nearest to, or in contact with the sides of the areolæ. At this period the cells shoot out or extend their canaliculi between the fibrillæ just formed, and then the cell-wall and continuous walls of the canaliculi fuse with the translucent, homogeneous, or hyaline substance of the cartilage existing between the cells and the osseous fibrillæ, and with the fibrillæ themselves, by the deposit of the osseous salts. The period of the formation of the canaliculi appears to be quite definite, occurring during the deposit of the osseous salts, and not before. To such an extent is this the case, that I noticed in several instances cells which had formed their canaliculi upon the side which was ossified, while upon the other side I could not distinguish any trace of them.

During the whole time of the formation of the Purkinjean corpuscle, the nucleus remains unchanged; at least no change is perceptible in it beneath the microscope; and by applying tincture of iodine to the preparation, which turns the nucleus brown, I was able

to detect it within the perfected Purkinjean corpuscle, not only corresponding to the nucleus of the remaining unossified cartilage-cells in granular structure, but also in its measurements. After the Purkinjean corpuscle has been formed a short time, the nucleus dissolves away or disappears.

The newly-formed Purkinjean corpuscle is about the same size as the remaining unossified cartilage-cells, as indicated in the list of measurements appended to these notes.

Size of cell of temporary cartilage from the unossified os frontis of a human embryo, $\frac{1}{1836}$ of an inch; nucleus of ditto, $\frac{1}{3125}$ of an inch; nucleolus, $\frac{1}{8333}$ of an inch; Purkinjean corpuscle, $\frac{1}{1363}$ of an inch; nucleus within the same, $\frac{1}{3030}$ of an inch.—*Proceedings of the Academy of Natural Sciences of Philadelphia*, vol. iv. p. 116.

MODE OF PROGRESSION WITH ANIMALS.

It has been noticed by nearly all naturalists, as one of the peculiarities of the Giraffe, that it moves the two legs on the same side of it together; I have however noticed that most other animals *walk* in that manner, although few run so; among others I will mention the following as verifying my observations:—the Camel, the Lion, the Tiger, and Leopard, and all animals of the Felidæ, the Wolf, and Hyæna, and all the canine race.

Sometimes I have observed the same peculiarity in the Horse and Ass, though rarely; the Camel *runs* so; the other animals which I have mentioned, I have never observed to *walk* in the usual manner.

W. A. PIKE.

Descriptions of new species of the genera Nyctale, Brehm., and Sycobius, Vieill. By JOHN CASSIN.

Genus NYCTALE, *Brehm. Handb. Nat. Vög. Deuts.* p. 111.

Nyctale Harrisii, nobis.

Front, face, nuchal collar, and under surface of the body yellowish white, or buff colour.

Spot between the eye and the bill, and a broad occipital band, black, the latter covering the greater part of the hind head.

Feathers covering the ear black.

Throat with a few black feathers, and many of the feathers of the ruff on the front neck conspicuously tipped with black.

Upper surface of the back and wings deep reddish brown; wing-coverts with conspicuous round spots of white; all the quill-feathers also irregularly marked and spotted with white on the edges of both webs; scapulars largely edged with white and buff.

Upper tail-coverts brown, spotted with white. Tail black, with about three pairs of rounded white spots on every feather. Tarsi thickly feathered to the toes, and with the whole under surface of the body buff colour.

Total length of skin, from tip of bill to end of tail, about $7\frac{1}{2}$ in.; wing, $5\frac{3}{4}$; tail, $2\frac{2}{3}$.

Hab. South America?

The specimen now described was obtained from Mr. J. G. Bell,